# INDEX OF AUTHORS

## VOLUME XXXIII

## TRANSACTIONS OF AMERICAN SOCIETY FOR METALS

## 1944


**A**

Alexander, C. W. ..... 42

**B**

Baldwin, Jr., William Marsh .. 88
Bishop, R. W. ..... 455
Bowman, F. E. ..... 481
Brodie, Constance B. ..... 126
Burgess, C. O. ..... 455
Burr, Arthur A. ..... 73

**C**

Cohen, Morris ..... 411
Cole, P. S. ..... 396
Coleman, H. S. ..... 73
Comstock, George F. ..... 324

**D**

Davey, W. P. ..... 73

**E**

Ebert, L. J. ..... 340
Elmendorf, H. J. ..... 236

**F**

Fenstermacher, W. H. ..... 19

**G**

Geil, G. W. ..... 514
Gordon, Paul ..... 411

**H**

Harrington, R. H. ..... 494
Herres, S. A. ..... 535
Hollomon, J. H. .....1, 163
Howald, Thomas S. ..... 88

**L**

Lansdale, P. T. ..... 42
Lehrer, Wm. ..... 290
Lubahn, J. D. ..... 340

**M**

McAdam, Jr., D. J. ..... 514
McGuire, Francis T. ..... 103

**P**

Parke, R. M. ..... 481
Parker, E. R. ..... 150
Payson, Peter ..... 261
Post, C. B. ..... 19

**R**

Rose, Robert S. ..... 411
Roth, R. A. ..... 396
Russell, John V. ..... 103

**S**

Sachs, G. .....340, 396
Savage, Charles H. ..... 261
Spring, E. K. ..... 42

**T**

Townes, Charles H. ..... 281

**Z**

Zener, C. .....1, 163

# INDEX OF SUBJECTS AND AUTHORS OF PAPERS

## VOLUME XXXIII

## TRANSACTIONS OF AMERICAN SOCIETY FOR METALS

## 1944

### A


Aircraft Tubes; Bright Gas Quenching of S.A.E. X-4130 and NE 8630 Welded—*By Wm. Lehrer* ..... 290
Alloy Steel Bolts; Strength of Heat Treated—*By G. Sachs, P. S. Cole and R. A. Roth* ..... 396
Alloy Steels; Arc Welding of—*By S. A. Herres*..... 535
Alloy Steels; Martensite Reactions in—*By Peter Payson and Charles H. Savage* ..... 261
Aluminum; X-Ray Study of the Time-Rate of Precipitation from a Solid Solution of Copper in—*By Charles H. Townes*..... 281
Arc Welding of Alloy Steels—*By S. A. Herres*..... 535
Austenite in Manganese Steels; Metallographic Study of the Decomposition of—*By John V. Russell and Francis T. McGuire*..... 103
Austenite Remaining After Controlled Quenching; Effect of Varying Amounts of Martensite Upon the Isothermal Transformation of—*By H. J. Elmendorf*..... 236


### B


Blocks and Cylinders; Rates of Cooling in—*By C. B. Post and W. H. Fenstermacher* ..... 19
Bolts; Strength of Heat Treated Alloy Steel—*By G. Sachs, P. S. Cole and R. A. Roth*..... 396
Brasses Formed by the Interdiffusion of Copper and Zinc Deposited on Glass by Vaporization; X-Ray Study of—*By Arthur A. Burr, H. S. Coleman and W. P. Davey*..... 73
Bright Gas Quenching of S.A.E. X-4130 and NE 8630 Welded Aircraft Tubes—*By Wm. Lehrer* ..... 290


### C


Cast Irons Exposed to Elevated Temperatures; Optimum Silicon Range in Plain and 2.0 Per Cent Chromium—*By C. O. Burgess and R. W. Bishop* ..... 455
Chromium (2.0 Per Cent) and Plain Cast Irons Exposed to Elevated Temperatures; Optimum Silicon Range in—*By C. O. Burgess and R. W. Bishop* ..... 455
Cohesion of Metals; Intercrystalline—*By E. R. Parker*..... 150
Cooling in Blocks and Cylinders; Rates of—*By C. B. Post and W. H. Fenstermacher* ..... 19
Copper and Zinc Deposited on Glass by Vaporization; X-Ray Study of Brasses Formed by the Interdiffusion of—*By Arthur A. Burr, H. S. Coleman and W. P. Davey*..... 73

Copper in Aluminum; X-Ray Study of the Time-Rate of Precipitation from a Solid Solution of—*By Charles H. Townes* ..... 281
Cylinders; Quenching and Hardenability of Hollow—*By J. H. Hollomon and C. Zener* ..... 1
Cylinders and Blocks; Rates of Cooling in—*By C. B. Post and W. H. Fenstermacher* ..... 19

## D

Decomposition of Austenite in Manganese Steels; Metallographic Study of the—*By John V. Russell and Francis T. McGuire* ..... 103
Dimensional Changes Encountered in Tube Sinking—*By William Marsh Baldwin, Jr. and Thomas S. Howald* ..... 88

## E

Effect of Quenching-Bath Temperature on the Tempering of High Speed Steel—*By Paul Gordon, Morris Cohen and Robert S. Rose* ..... 411
Effect of Varying Amounts of Martensite Upon the Isothermal Transformation of Austenite Remaining After Controlled Quenching—*By H. J. Elmendorf* ..... 236
Effects of Heat Treatment on Low Alloy Titanium Steels—*By George F. Comstock* ..... 324
Electrical Conductivity of Metals with Temperature; Variation of the Strength, Resistance to Oxidation and—*By D. J. McAdam, Jr. and G. W. Geil* ..... 514
Evaluation of Quenching Oils—*By E. K. Spring, P. T. Lansdale and C. W. Alexander* ..... 42

## G

Gas Quenching of S.A.E. X-4130 and NE 8630 Welded Aircraft Tubes; Bright—*By Wm. Lehrer* ..... 290

## H

Hardenability and Quenching of Hollow Cylinders—*By J. H. Hollomon and C. Zener* ..... 1
Heat Treated Alloy Steel Bolts; Strength of—*By G. Sachs, P. S. Cole and R. A. Roth* ..... 396
Heat Treated Low Alloy Steels; Notched Bar Tensile Test Characteristics of—*By G. Sachs, J. D. Lubahn and L. J. Ebert* ..... 340
Heat Treatment on Low Alloy Titanium Steels; Some Effects of—*By George F. Comstock* ..... 324
High Speed Steel; Effect of Quenching-Bath Temperature on the Tempering of—*By Paul Gordon, Morris Cohen and Robert S. Rose* ..... 411
Hollow Cylinders; Quenching and Hardenability of—*By J. H. Hollomon and C. Zener* ..... 1

## I

Intercrystalline Cohesion of Metals—*By E. R. Parker* ..... 150
Interdiffusion of Copper and Zinc Deposited on Glass by Vaporization; X-Ray Study of Brasses Formed by the—*By Arthur A. Burr, H. S. Coleman and W. P. Davey* ..... 73
Interrupted Quench and Isothermal Treatments of Precipitation Hardening Alloys: Introductory Notes—*By R. H. Harrington* ..... 494

Iron-Carbon-Molybdenum Alloys at 1300 Degrees Fahr. and the Nature of the Carbides Formed; Partition of Molybdenum in—*By F. E. Bowman and R. M. Parke* ..... 481
Isothermal Transformation of Austenite Remaining After Controlled Quenching; Effect of Varying Amounts of Martensite Upon the—*By H. J. Elmendorf* ..... 236
Isothermal Treatments of Precipitation Hardening Alloys: Introductory Notes; Interrupted Quench and—*By R. H. Harrington* ..... 494

## L

Low Alloy Steels; Notched Bar Tensile Test Characteristics of Heat Treated—*By G. Sachs, J. D. Lubahn and L. J. Ebert* ..... 340
Low Alloy Titanium Steels; Some Effects of Heat Treatment on—*By George F. Comstock* ..... 324

## M

Manganese Steels; Metallographic Study of the Decomposition of Austenite in—*By John V. Russell and Francis T. McGuire* ..... 103
Martensite Reactions in Alloy Steels—*By Peter Payson and Charles H. Savage* ..... 261
Martensite Upon the Isothermal Transformation of Austenite Remaining After Controlled Quenching; Effect of Varying Amounts of—*By H. J. Elmendorf* ..... 236
Metallographic Study of the Decomposition of Austenite in Manganese Steels—*By John V. Russell and Francis T. McGuire* ..... 103
Microhardness Tester as a Metallurgical Tool—*By Constance B. Brodie* 126
Molybdenum in Iron-Carbon-Molybdenum Alloys at 1300 Degrees Fahr. and the Nature of the Carbides Formed; Partition of—*By F. E. Bowman and R. M. Parke* ..... 481

## N

NE 8630 and S.A.E. X-4130 Welded Aircraft Tubes; Bright Gas Quenching of—*By Wm. Lehrer* ..... 290
Notched Bar Tensile Test Characteristics of Heat Treated Low Alloy Steels—*By G. Sachs, J. D. Lubahn and L. J. Ebert* ..... 340

## O

Oils; Evaluation of Quenching—*By E. K. Spring, P. T. Lansdale and C. W. Alexander* ..... 42
Optimum Silicon Range in Plain and 2.0 Per Cent Chromium Cast Irons Exposed to Elevated Temperatures—*By C. O. Burgess and R. W. Bishop* ..... 455

## P

Partition of Molybdenum in Iron-Carbon-Molybdenum Alloys at 1300 Degrees Fahr. and the Nature of the Carbides Formed—*By F. E. Bowman and R. M. Parke* ..... 481
Plain and 2.0 Per Cent Chromium Cast Irons Exposed to Elevated Temperatures; Optimum Silicon Range in—*By C. O. Burgess and R. W. Bishop* ..... 455
Plastic Flow and Rupture of Metals—*By C. Zener and J. H. Hollomon* 163

Precipitation from a Solid Solution of Copper in Aluminum; X-Ray Study of the Time-Rate of—*By Charles H. Townes*..... 281
Precipitation Hardening Alloys: Introductory Notes; Interrupted Quench and Isothermal Treatments of—*By R. H. Harrington*..... 494

## Q

Quenching and Hardenability of Hollow Cylinders—*By J. H. Hollomon and C. Zener*..... 1
Quenching-Bath Temperature Effect on the Tempering of High Speed Steel—*By Paul Gordon, Morris Cohen and Robert S. Rose*..... 411
Quenching Oils; Evaluation of—*By E. K. Spring, P. T. Lansdale and C. W. Alexander*..... 42

## R

Rates of Cooling in Blocks and Cylinders—*By C. B. Post and W. H. Fenstermacher*..... 19
Resistance to Oxidation, Strength, and Electrical Conductivity of Metals with Temperature; Variation of the—*By D. J. McAdam, Jr. and G. W. Geil*..... 514
Rupture of Metals and Plastic Flow—*By C. Zener and J. H. Hollomon* 163

## S

S.A.E. X-4130 and NE 8630 Welded Aircraft Tubes; Bright Gas Quenching of—*By Wm. Lehrer*..... 290
Silicon Range in Plain and 2.0 Per Cent Chromium Cast Irons Exposed to Elevated Temperatures; Optimum—*By C. O. Burgess and R. W. Bishop*..... 455
Solid Solution of Copper in Aluminum; X-Ray Study of the Time-Rate of Precipitation from a—*By Charles H. Townes*..... 281
Some Effects of Heat Treatment on Low Alloy Titanium Steels—*By George F. Comstock*..... 324
Strength of Heat Treated Alloy Steel Bolts—*By G. Sachs, P. S. Cole and R. A. Roth*..... 396
Strength, Resistance to Oxidation and Electrical Conductivity of Metals with Temperature; Variation of the—*By D. J. McAdam, Jr. and G. W. Geil*..... 514

## T

Tempering of High Speed Steel; Effect of Quenching-Bath Temperature on the—*By Paul Gordon, Morris Cohen and Robert S. Rose*..... 411
Tensile Test Characteristics of Heat Treated Low Alloy Steels; Notched Bar—*By G. Sachs, J. D. Lubahn and L. J. Ebert*..... 340
Tester (Microhardness) as a Metallurgical Tool—*By Constance B. Brodie* 126
Time-Rate of Precipitation from a Solid Solution of Copper in Aluminum; X-Ray Study of the—*By Charles H. Townes*..... 281
Titanium Steels; Some Effects of Heat Treatment on Low Alloy—*By George F. Comstock*..... 324
Tubes; Bright Gas Quenching of S.A.E. X-4130 and NE 8630 Welded Aircraft—*By Wm. Lehrer*..... 290
Tube Sinking; Dimensional Changes Encountered in—*By William Marsh Baldwin, Jr. and Thomas S. Howald*..... 88

## V

Variation of the Strength, Resistance to Oxidation, and Electrical Conductivity of Metals with Temperature—*By D. J. McAdam, Jr. and G. W. Geil* ..... 514

## W

Welded Aircraft Tubes; Bright Gas Quenching of S.A.E. X-4130 and NE 8630—*By Wm. Lehrer* ..... 290
Welding (Arc) of Alloy Steels—*By S. A. Herres* ..... 535

## X

X-Ray Study of Brasses Formed by the Interdiffusion of Copper and Zinc Deposited on Glass by Vaporization—*By Arthur A. Burr, H. S. Coleman and W. P. Davey* ..... 73
X-Ray Study of the Time-Rate of Precipitation from a Solid Solution of Copper in Aluminum—*By Charles H. Townes* ..... 281

## Z

Zinc and Copper Deposited on Glass by Vaporization; X-Ray Study of Brasses Formed by the Interdiffusion of—*By Arthur A. Burr, H. S. Coleman and W. P. Davey* ..... 73